

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith, which place the application into condition for allowance. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1, 12, 13, 22, 33, 34, 43, 54, 55, 64, and 67 are pending in this application. Claims 2-6, 9-11, 14-15, 18-21, 23-27, 30-32, 35-36, 39-42, 44-48, 51-53, 56-57, 60-63, 65-66, and 68-80 have been withdrawn from further consideration. Claims 7, 8, 16, 17, 28, 29, 37, 38, 49, 50, 58, and 59 have been canceled without prejudice or disclaimer of subject matter. Claims 22, 43, 64, and 67 have been amended in this response. Support for this amendment is provided throughout the Specification and claims as originally filed. Accordingly, no new matter has been added.

Changes to claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

Applicants respectfully submit that the withdrawn claims should be reconsidered and reintroduced into the application when the independent claims from which they depend are found allowable.

II. REJECTIONS UNDER 35 U.S.C. §101

Claims 43, 54-55, and 67 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

These claims have been amended, thereby obviating the §101 rejections.

III. REJECTIONS UNDER 35 U.S.C. §112

Claims 22, 33-34, 43, 54-55, 64, and 67 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claims 22, 43, 64, and 67 have been amended to overcome the §112 rejections.

IV. REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1, 12, 13, 22, 33, 34, 43, 54, 55, 64, and 67 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over U.S. Patent No. 6,157,677 to Martens et al. (hereinafter “Martens”) in view of U.S. Patent No. 6,885,971 to Vock et al. (hereinafter “Vock”).

A. Claim Recitations

Independent claim 1 recites, in part:

“An apparatus comprising ...

memory means for storing relationship information generated by learning based on camera motion estimation information for learning expressing motion of a video camera, which is detected by a desired image signal picked up by the video camera, and camera motion information for learning expressing physical motion of the video camera ...

camera motion prediction information generation means ...
wherein the desired image signal is a signal obtained for learning

processing that is performed automatically by a learning section of said apparatus." (Emphasis added)

B. Art Used As A Basis Of Rejection

As understood by the Applicants, Martens relates to a method for estimating motion between one reference image and each frame in a sequence of frames, each frame consisting of a plurality of samples of an input signal. The method includes transforming the estimated motion fields into a motion matrix, wherein each row corresponds to one frame, and each row contains each component of motion vector for each element of the reference image. A Principal Component Analysis of the motion matrix is performed, thereby obtaining a motion score matrix consisting of a plurality of column vectors called motion score vectors and a motion loading matrix consisting of a plurality of row vectors called motion loading vectors, such that each motion score vector corresponds to one element for each frame. Each element of each motion loading vector corresponds to one element of the reference image, such that one column of said motion score matrix and one motion loading vector together constitute a factor. The number of factors is lower than or equal to the number of said frames.

The results from the Principal Component Analysis on the motion matrix are used to influence further estimation of motion from the reference image to one or more of the frames. (See Martens -- Abstract)

The Office Action concedes that "Martens fails to disclose the use of learning as executed by learning processors." (See Office Action -- page 7) The Office Action relies on Vock for the disclosure missing from Martens.

As understood by the Applicants, Vock relates to a system that detects the loft time, speed, power and/or drop distance of a vehicle, such as a sporting vehicle, during activities

of moving and jumping. A loft sensor detects when the vehicle leaves the ground and when the vehicle returns to the ground. A controller subsystem converts the sensed information to determine a loft time. A display shows the recorded loft time to a user of the system. In addition, a speed sensor can detect the vehicle's speed for selective display to the user. A power sensing section informs the user of expended energy, which can be compared to other users. A drop distance sensing unit informs the user of the peak height of a jump, during an airtime.

(Vock -- Abstract)

C. Claims Are Patentable Over The Art Used As A Basis Of Rejection

As stated previously, the Office Action concedes that "Martens fails to disclose the use of learning as executed by learning processors." (See Office Action -- page 7) The Office Action relies on Vock for the disclosure missing from Martens. However, for the reasons stated below, Vock does not provide the disclosure lacking from Martens, and therefore, the combination fails to provide a proper basis for rejection.

First, Vock relates to a system that detects the loft time, speed, power and/or drop distance of a sporting vehicle during activities of moving and jumping, as indicated above. Second, Vock uses a camera that is stationary.

Vock specifically states that "The imaging system can thus include a CCD camera that looks at the slope and watches skiers traverse down the slope. By knowing the distances along the slope, and the fact that the camera is stationary, the distance moved is determined frame to frame, corresponding to position in time that correlates to speed." (Emphasis added, See Vock -- col. 19, lines 59-65).

Therefore, neither Martens nor Vock, considered either alone or in combination, teach an apparatus including memory means for storing relationship information generated by learning based on camera motion estimation information for learning expressing motion of a video camera, which is detected by a desired image signal picked up by the video camera, and camera motion information for learning expressing physical motion of the video camera, as recited in claim 1.

Additionally, the combination of Martens and Vock fails to teach or suggest a camera motion prediction information generation means wherein the desired image signal is a signal obtained for learning processing that is performed automatically by a learning section of the apparatus, as recited in independent claim 1.

Applicants respectfully submit that none of the cited references, considered either alone or in combination, teach or suggest the above identified feature of claim 1.

Therefore, independent claim 1 is clearly distinguishable and therefore patentable over the combination of Martens and Vock as applied by the Examiner.

For similar reasons, claims 22, 43, 64, and 67 are also distinguishable from Martens and Vock as applied by the Examiner.

V. DEPENDENT CLAIMS

Since the other claims are each dependent from one of the independent claims discussed above, they are also patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, it is submitted that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Please charge any fees incurred by reason of this response to Deposit Account No. 50-0320.

Respectfully submitted,
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